ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

September 23, 2013

Project: Mayflower, AR Pipeline Incident

Submittal Date: 09/14/2013
Group Number: 1418941
SDG: PEL47
PO Number: B0086003.1301
State of Sample Origin: AR

| Client Sample Description | Lancaster Labs (LL) # |
|---|---|
| WS-014(1.5-2.0)091313 Grab Surface Water | 7198318 |
| WS-014(5.5-6.0)091313 Grab Surface Water | 7198319 |
| WS-012(1.5-2.0)091313 Grab Surface Water | 7198320 |
| WS-012(5.0-5.5)091313 Grab Surface Water | 7198321 |
| WS-010(1.5-2.0)091313 Grab Surface Water | 7198322 |
| WS-010(3.5-4.0)091313 Grab Surface Water | 7198323 |
| WS-006(0.5-1.0)091313 Grab Surface Water | 7198324 |
| WS-006(0.5-1.0)091313MS Grab Surface Water | 7198325 |
| WS-006(0.5-1.0)091313MSD Grab Surface Water | 7198326 |
| WS-006(0.5-1.0)091313DUP Grab Surface Water | 7198327 |
| WS-005(Surface)091313 Grab Surface Water | 7198328 |
| WS-002(Surface)091313 Grab Surface Water | 7198329 |
| WS-011(1.5-2.0)091313 Grab Surface Water | 7198330 |
| WS-011(5.0-5.5)091313 Grab Surface Water | 7198331 |
| WS-018(Surface)091313 Grab Surface Water | 7198332 |
| WS-003(Surface)091313 Grab Surface Water | 7198333 |
| WS-007(0.5-1.0)091313 Grab Surface Water | 7198334 |
| WS-001(0.5-1.0)091313 Grab Surface Water | 7198335 |
| WS-EB-060-091313 Grab Water | 7198336 |
| WS-TB-149-091313 Water | 7198337 |

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

| | | |
|---|---|---|
| ELECTRONIC COPY TO | ARCADIS | Attn: Stephen Barrick |
| ELECTRONIC COPY TO | ARCADIS | Attn: Lyndi Mott |

| | | |
|---|---|---|
| ELECTRONIC COPY TO | ExxonMobil | Attn: Michael J. Firth |
| ELECTRONIC COPY TO | ARCADIS | Attn: Emily Leamer |
| ELECTRONIC COPY TO | ARCADIS | Attn: Rhiannon Parmalee |
| ELECTRONIC COPY TO | ARCADIS | Attn: Jamie Pritchard |
| ELECTRONIC COPY TO | ExxonMobil | Attn: Michael L Sixsmith |
| ELECTRONIC COPY TO | ExxonMobil | Attn: Julie Foster |

Respectfully Submitted,

Katherine A. Klinefelter

Katherine A. Klinefelter
Principal Specialist

(717) 556-7256

Project Name: Mayflower, AR Pipeline Incident
LLI Group #: 1418941

**General Comments:**

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

**Analysis Specific Comments:**

SW-846 8270C SIM, GC/MS Semivolatiles

Batch #: 13258WAA026 (Sample number(s): 7198318-7198326, 7198328-7198336 UNSPK: 7198324)

The recovery(ies) for the following analyte(s) in the LCS were below the acceptance window: Fluoranthene

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Anthracene, Benzo(a)pyrene

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: Benzo(b)fluoranthene, Benzo(k)fluoranthene

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 7198333, 7198334, 7198335

Sample #s: 7198318, 7198319, 7198320, 7198321, 7198322, 7198323, 7198324, 7198325, 7198326, 7198328, 7198329, 7198330, 7198331, 7198332, 7198336

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

Sample #s: 7198333, 7198334, 7198335

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene
The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

**EPA 1664A, Wet Chemistry**

Batch #: 13262807903A (Sample number(s): 7198318-7198335 UNSPK: 7198324 BKG: 7198324)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: HEM (oil & grease)

The relative percent difference(s) for the following analyte(s) in the MS/MSD were outside outside acceptance windows: HEM (oil & grease)

The duplicate RPD for the following analyte(s) exceeded the acceptance window: HEM (oil & grease)

**Sample Description:** WS-014(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198318**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4701 SDG#: PEL47-01

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-014(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198318**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4701 SDG#: PEL47-01

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.011 | 0.053 | 1 |
| | The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene | | | | | |
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 31.6 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-014(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198318**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4701 SDG#: PEL47-01

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0566 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | 0.0048 J | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.32 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.24 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 1.5 J | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 14:08 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 14:08 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 16:49 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/18/2013 13:00 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:19 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:19 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:19 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:19 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/18/2013 13:00 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:19 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/18/2013 13:00 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/18/2013 13:00 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:19 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:19 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:03 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-014(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198318**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4701 SDG#: PEL47-01

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-014(5.5-6.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198319**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4702 SDG#: PEL47-02

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-014(5.5-6.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198319**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4702 SDG#: PEL47-02

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.031 | 0.052 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.031 | 0.052 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.010 | 0.052 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 32.0 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-014(5.5-6.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198319**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4702 SDG#: PEL47-02

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0533 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.38 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | 0.0016 J | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.28 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | 0.0017 J | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 1.9 J | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 14:51 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 14:51 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 17:19 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:22 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:06 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-014(5.5-6.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198319**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 08:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4702 SDG#: PEL47-02

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-012(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198320**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4703 SDG#: PEL47-03

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-012(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198320**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4703 SDG#: PEL47-03

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.011 | 0.053 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 32.7 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-012(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198320**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4703 SDG#: PEL47-03

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0653 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.54 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.37 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 15:12 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 15:12 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 17:48 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:34 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:08 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **WS-012(1.5-2.0)091313 Grab Surface Water**
**Mayflower, AR**
**Pipeline Incident**

**LL Sample # WW 7198320**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4703 SDG#: PEL47-03

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-012(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198321**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4704 SDG#: PEL47-04

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-012(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198321**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4704 SDG#: PEL47-04

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.011 | 0.054 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.032 | 0.054 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.032 | 0.054 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.011 | 0.054 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 31.6 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-012(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198321**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4704 SDG#: PEL47-04

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0760 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.30 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.24 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 1.5 J | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 15:34 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 15:34 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 18:18 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:38 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:10 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-012(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198321**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4704 SDG#: PEL47-04

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198322**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4705 SDG#: PEL47-05

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198322**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4705 SDG#: PEL47-05

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.011 | 0.053 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 31.8 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198322**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4705 SDG#: PEL47-05

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0577 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.40 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.24 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 15:55 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 15:55 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 18:47 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:42 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:12 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198322**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4705 SDG#: PEL47-05

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(3.5-4.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198323**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4706 SDG#: PEL47-06

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(3.5-4.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198323**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4706 SDG#: PEL47-06

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.031 | 0.052 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.031 | 0.052 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.010 | 0.052 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 32.0 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(3.5-4.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198323**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4706 SDG#: PEL47-06

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0089 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0556 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.38 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.29 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 2.0 J | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 16:16 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 16:16 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 19:17 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:46 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:14 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-010(3.5-4.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198323**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4706 SDG#: PEL47-06

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198324**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07BKG

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198324**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07BKG

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.030 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.030 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.010 | 0.051 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 30.4 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198324**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07BKG

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0078 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0521 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 6.99 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.15 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 1.9 J | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 11:19 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 11:19 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 15:21 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 08:54 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:16 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description: WS-006(0.5-1.0)091313 Grab Surface Water**
**Mayflower, AR**
**Pipeline Incident**

**LL Sample # WW 7198324**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07BKG

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MS Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198325**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MS

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | 43 | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | 4.5 | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | 4.6 | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | 4.5 | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | 39 | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | 4.6 | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | 5.1 | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | 3.8 | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | 5.3 | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | 5.8 | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | 5.3 | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | 5.4 | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | 5.2 | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | 4.5 | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | 25 | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | 5.1 | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MS Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198325**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MS

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | 25 | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | 4.3 | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | 4.4 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | 4.8 | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | 14 | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | 0.90 | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | 0.98 | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | 0.54 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | 0.77 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | 0.47 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | 0.84 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | 0.66 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | 0.72 | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | 0.78 | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | 0.76 | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | 1.0 | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | 0.99 | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.74 | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | 1.1 | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | 1.1 | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | 1.0 | 0.030 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | 0.95 | 0.030 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | 0.78 | 0.010 | 0.051 | 1 |
| | The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene | | | | | |
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 49.4 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MS Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample #** WW 7198325
**LL Group #** 1418941
**Account #** 14739

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MS

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | mg/l | mg/l | mg/l | |
| 07035 | Arsenic | 7440-38-2 | 0.158 | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 2.06 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | 0.0525 | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 11.1 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | 0.205 | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | 0.156 | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 5.23 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | 0.527 | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | 0.155 | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | 0.0468 | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | 0.513 | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | mg/l | mg/l | mg/l | |
| 00259 | Mercury | 7439-97-6 | 0.00092 | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | mg/l | mg/l | mg/l | |
| 08079 | HEM (oil & grease) | n.a. | 24.4 | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 11:40 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 11:40 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 15:50 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:06 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:24 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MS Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198325**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MS

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MSD Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198326**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MSD

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | 38 | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | 4.5 | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | 4.6 | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | 4.6 | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | 37 | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | 5.3 | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | 4.6 | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | 4.7 | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | 3.9 | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | 5.3 | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | 5.4 | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | 5.4 | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | 5.9 | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | 5.4 | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | 5.1 | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | 5.5 | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | 5.3 | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | 4.5 | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | 24 | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | 5.2 | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MSD Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198326**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MSD

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | 4.7 | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | 23 | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | 4.4 | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | 4.5 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | 5.2 | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | 5.3 | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | 5.0 | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | 4.7 | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | 4.9 | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | 4.8 | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | 15 | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | 0.89 | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | 0.97 | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | 0.54 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | 0.80 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | 0.46 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | 1.1 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | 0.70 | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | 0.99 | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | 0.82 | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | 0.82 | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | 1.0 | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | 0.99 | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.77 | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | 1.1 | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | 1.1 | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | 1.0 | 0.030 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | 0.97 | 0.030 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | 0.80 | 0.010 | 0.051 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 50.5 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MSD Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198326**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MSD

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.161 | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 2.06 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | 0.0519 | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 11.4 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | 0.203 | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | 0.156 | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 5.32 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | 0.523 | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | 0.155 | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | 0.0469 | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | 0.515 | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | 0.00093 | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 12:01 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 12:01 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 16:20 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:10 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:26 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313MSD Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198326**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07MSD

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-006(0.5-1.0)091313DUP Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198327**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 09:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4707 SDG#: PEL47-07DUP

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 30.6 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0070 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0522 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.03 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.16 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 1.6 J | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:02 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:22 | Damary Valentin | 1 |
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-005(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198328**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:20 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4708 SDG#: PEL47-08

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-005(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198328**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:20 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4708 SDG#: PEL47-08

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.011 | 0.053 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 31.5 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-005(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198328**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:20 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4708 SDG#: PEL47-08

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0604 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.36 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.19 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 16:37 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 16:37 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 19:46 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:50 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:28 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **WS-005(Surface)091313 Grab Surface Water**
**Mayflower, AR**
**Pipeline Incident**

**LL Sample # WW 7198328**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:20 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4708 SDG#: PEL47-08

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-002(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198329**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4709 SDG#: PEL47-09

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-002(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198329**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4709 SDG#: PEL47-09

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.030 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.030 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.010 | 0.051 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 32.2 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-002(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198329**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4709 SDG#: PEL47-09

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0791 | | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.45 | | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.30 | | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | 2.3 | J | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 16:58 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 16:58 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 20:15 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:54 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:30 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-002(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198329**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:10 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4709 SDG#: PEL47-09

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-011(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198330**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4710 SDG#: PEL47-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-011(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198330**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4710 SDG#: PEL47-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.011 | 0.053 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.032 | 0.053 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.011 | 0.053 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 32.8 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-011(1.5-2.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198330**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4710 SDG#: PEL47-10

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0092 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0963 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.52 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.42 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 17:19 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 17:19 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 20:45 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 09:58 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:32 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** **WS-011(1.5-2.0)091313 Grab Surface Water**
**Mayflower, AR**
**Pipeline Incident**

**LL Sample # WW 7198330**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 10:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4710 SDG#: PEL47-10

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-011(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198331**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4711 SDG#: PEL47-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-011(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198331**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4711 SDG#: PEL47-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.010 | 0.052 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | 0.031 | 0.052 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.031 | 0.052 | 1 |
| 08357 | Pyrene | 129-00-0 | 0.024 J | 0.010 | 0.052 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene

| | | | | | | |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 33.0 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-011(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198331**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4711 SDG#: PEL47-11

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0074 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.103 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.53 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.45 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | 0.0021 J | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 17:41 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 17:41 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 21:14 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:02 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:34 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-011(5.0-5.5)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198331**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4711 SDG#: PEL47-11

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-018(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198332**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4712 SDG#: PEL47-12

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-018(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198332**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4712 SDG#: PEL47-12

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | 0.1 | J | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | | 0.030 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | | 0.030 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | | 0.010 | 0.051 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 32.3 | | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-018(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198332**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4712 SDG#: PEL47-12

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0072 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0614 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.38 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.37 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 18:02 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 18:02 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 21:43 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:06 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:36 | Damary Valentin | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-018(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198332**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4712 SDG#: PEL47-12

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-003(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198333**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4713 SDG#: PEL47-13

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-003(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198333**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4713 SDG#: PEL47-13

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | 0.1 | J | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | | 0.030 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | | 0.030 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | | 0.010 | 0.051 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-003(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198333**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4713 SDG#: PEL47-13

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 32.6 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0073 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0448 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.46 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.38 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 18:23 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 18:23 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 22:13 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-003(Surface)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198333**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:40 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4713 SDG#: PEL47-13

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:10 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:38 | Damary Valentin | 1 |
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-007(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198334**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4714 SDG#: PEL47-14

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | 4.3 | J | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-007(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198334**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4714 SDG#: PEL47-14

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | 0.024 | J | 0.010 | 0.050 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | 0.075 | | 0.010 | 0.050 | 1 |
| 08357 | Anthracene | 120-12-7 | 0.087 | | 0.010 | 0.050 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | 0.14 | | 0.010 | 0.050 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | 0.17 | | 0.010 | 0.050 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | 0.66 | | 0.010 | 0.050 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | 0.17 | | 0.010 | 0.050 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | 0.23 | | 0.010 | 0.050 | 1 |
| 08357 | Chrysene | 218-01-9 | 0.38 | | 0.010 | 0.050 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | 0.050 | J | 0.010 | 0.050 | 1 |
| 08357 | Fluoranthene | 206-44-0 | 0.65 | | 0.010 | 0.050 | 1 |
| 08357 | Fluorene | 86-73-7 | 0.028 | J | 0.010 | 0.050 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.21 | | 0.010 | 0.050 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | 0.013 | J | 0.010 | 0.050 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | | 0.010 | 0.050 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | | 0.030 | 0.050 | 1 |
| 08357 | Phenanthrene | 85-01-8 | 0.13 | | 0.030 | 0.050 | 1 |
| 08357 | Pyrene | 129-00-0 | 0.51 | | 0.010 | 0.050 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-007(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198334**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4714 SDG#: PEL47-14

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 39.2 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0124 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.205 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | 0.0012 J | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.67 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | 0.0218 | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | 0.0566 | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 4.88 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | 0.0223 | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | 0.0316 | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | 0.000082 J | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 18:44 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 18:44 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 22:42 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-007(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198334**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 11:50 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4714 SDG#: PEL47-14

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:22 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:48 | Damary Valentin | 1 |
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-001(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198335**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 12:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4715 SDG#: PEL47-15

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-001(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198335**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 12:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4715 SDG#: PEL47-15

| CAT No. | Analysis Name | CAS Number | As Received Result | | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | 0.1 | J | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | N.D. | | 0.031 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | | 0.031 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | | 0.010 | 0.051 | 1 |

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance:
fluoranthene

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The client was contacted and the data reported.

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-001(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198335**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 12:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4715 SDG#: PEL47-15

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 31.0 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | 0.0076 J | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0560 | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 7.15 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 3.20 | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |
| **Wet Chemistry** | **EPA 1664A** | | **mg/l** | **mg/l** | **mg/l** | |
| 08079 | HEM (oil & grease) | n.a. | N.D. | 1.4 | 5.0 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 19:06 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 19:06 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 23:12 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-001(0.5-1.0)091313 Grab Surface Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198335**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 12:00 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P4715 SDG#: PEL47-15

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:26 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:50 | Damary Valentin | 1 |
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |
| 08079 | HEM (oil & grease) | EPA 1664A | 1 | 13262807903A | 09/19/2013 17:00 | Michelle L Lalli | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-EB-060-091313 Grab Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198336**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 12:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P47EB SDG#: PEL47-16EB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-EB-060-091313 Grab Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198336**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 12:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P47EB SDG#: PEL47-16EB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |
| **GC/MS Semivolatiles** | **SW-846 8270C SIM** | | **ug/l** | **ug/l** | **ug/l** | |
| 08357 | Acenaphthene | 83-32-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Acenaphthylene | 208-96-8 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Anthracene | 120-12-7 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)anthracene | 56-55-3 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(a)pyrene | 50-32-8 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(b)fluoranthene | 205-99-2 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(g,h,i)perylene | 191-24-2 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Benzo(k)fluoranthene | 207-08-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Chrysene | 218-01-9 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Dibenz(a,h)anthracene | 53-70-3 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Fluoranthene | 206-44-0 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Fluorene | 86-73-7 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Indeno(1,2,3-cd)pyrene | 193-39-5 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | 1-Methylnaphthalene | 90-12-0 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | 2-Methylnaphthalene | 91-57-6 | N.D. | 0.010 | 0.051 | 1 |
| 08357 | Naphthalene | 91-20-3 | 0.13 | 0.030 | 0.051 | 1 |
| 08357 | Phenanthrene | 85-01-8 | N.D. | 0.030 | 0.051 | 1 |
| 08357 | Pyrene | 129-00-0 | N.D. | 0.010 | 0.051 | 1 |
| | The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the NELAC Standards. The following analytes are accepted based on this allowance: fluoranthene | | | | | |
| **Metals** | **SM 2340 B-1997** | | **mg/l** | **mg/l** | **mg/l** | |
| 06256 | Total Hardness as CaCO3 | 471-34-1 | 0.99 | 0.033 | 0.20 | 1 |
| | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-EB-060-091313 Grab Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198336**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013 12:30 by HVA

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P47EB SDG#: PEL47-16EB

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **Metals** | **SW-846 6010B** | | **mg/l** | **mg/l** | **mg/l** | |
| 07035 | Arsenic | 7440-38-2 | N.D. | 0.0068 | 0.0200 | 1 |
| 07046 | Barium | 7440-39-3 | 0.0027 J | 0.00033 | 0.0050 | 1 |
| 07049 | Cadmium | 7440-43-9 | N.D. | 0.00076 | 0.0050 | 1 |
| 01750 | Calcium | 7440-70-2 | 0.292 | 0.0334 | 0.200 | 1 |
| 07051 | Chromium | 7440-47-3 | N.D. | 0.0016 | 0.0150 | 1 |
| 07055 | Lead | 7439-92-1 | N.D. | 0.0047 | 0.0150 | 1 |
| 01757 | Magnesium | 7439-95-4 | 0.0630 J | 0.0167 | 0.100 | 1 |
| 07061 | Nickel | 7440-02-0 | N.D. | 0.0015 | 0.0100 | 1 |
| 07036 | Selenium | 7782-49-2 | N.D. | 0.0084 | 0.0200 | 1 |
| 07066 | Silver | 7440-22-4 | N.D. | 0.0021 | 0.0050 | 1 |
| 07071 | Vanadium | 7440-62-2 | N.D. | 0.0020 | 0.0050 | 1 |
| | **SW-846 7470A** | | **mg/l** | **mg/l** | **mg/l** | |
| 00259 | Mercury | 7439-97-6 | N.D. | 0.000060 | 0.00020 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 10:36 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 10:36 | Jason M Long | 1 |
| 08357 | PAHs in waters by SIM | SW-846 8270C SIM | 1 | 13258WAA026 | 09/19/2013 23:41 | Chad A Moline | 1 |
| 10470 | BNA Water Extraction (SIM) | SW-846 3510C | 1 | 13258WAA026 | 09/16/2013 10:00 | Katheryne V Sponheimer | 1 |
| 06256 | Total Hardness as CaCO3 | SM 2340 B-1997 | 1 | 132606256001 | 09/17/2013 12:34 | Deborah A Krady | 1 |
| 07035 | Arsenic | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07046 | Barium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07049 | Cadmium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 01750 | Calcium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07051 | Chromium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07055 | Lead | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 01757 | Magnesium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07061 | Nickel | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07036 | Selenium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07066 | Silver | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 07071 | Vanadium | SW-846 6010B | 1 | 132581848003 | 09/17/2013 10:30 | Eric L Eby | 1 |
| 00259 | Mercury | SW-846 7470A | 1 | 132585713002 | 09/17/2013 06:52 | Damary Valentin | 1 |
| 01848 | WW SW846 ICP Digest (tot rec) | SW-846 3005A | 1 | 132581848003 | 09/16/2013 10:30 | James L Mertz | 1 |
| 05713 | WW SW846 Hg Digest | SW-846 7470A | 1 | 132585713002 | 09/16/2013 16:20 | Nelli S Markaryan | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-TB-149-091313 Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198337**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P47TB SDG#: PEL47-17TB*

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | **ug/l** | **ug/l** | **ug/l** | |
| 02898 | Acetone | 67-64-1 | N.D. | 3.0 | 5.0 | 1 |
| 02898 | Allyl Chloride | 107-05-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Benzene | 71-43-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromobenzene | 108-86-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromochloromethane | 74-97-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromodichloromethane | 75-27-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromoform | 75-25-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Bromomethane | 74-83-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2-Butanone | 78-93-3 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | n-Butylbenzene | 104-51-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | sec-Butylbenzene | 135-98-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | tert-Butylbenzene | 98-06-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Carbon Tetrachloride | 56-23-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chlorobenzene | 108-90-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroethane | 75-00-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloroform | 67-66-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Chloromethane | 74-87-3 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 2-Chlorotoluene | 95-49-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Chlorotoluene | 106-43-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromo-3-chloropropane | 96-12-8 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Dibromochloromethane | 124-48-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dibromoethane | 106-93-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dibromomethane | 74-95-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichlorobenzene | 95-50-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichlorobenzene | 541-73-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,4-Dichlorobenzene | 106-46-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorodifluoromethane | 75-71-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethane | 75-34-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2-Dichloroethane | 107-06-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloroethene | 75-35-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,2-Dichloroethene | 156-59-2 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,2-Dichloroethene | 156-60-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Dichlorofluoromethane | 75-43-4 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | 1,2-Dichloropropane | 78-87-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3-Dichloropropane | 142-28-9 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 2,2-Dichloropropane | 594-20-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1-Dichloropropene | 563-58-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | cis-1,3-Dichloropropene | 10061-01-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | trans-1,3-Dichloropropene | 10061-02-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethyl ether | 60-29-7 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Ethylbenzene | 100-41-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Freon 113 | 76-13-1 | N.D. | 0.2 | 0.5 | 1 |
| 02898 | Hexachlorobutadiene | 87-68-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Isopropylbenzene | 98-82-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | p-Isopropyltoluene | 99-87-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Methyl Tertiary Butyl Ether | 1634-04-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 4-Methyl-2-Pentanone | 108-10-1 | N.D. | 1.0 | 5.0 | 1 |
| 02898 | Methylene Chloride | 75-09-2 | N.D. | 0.2 | 0.5 | 1 |

*=This limit was used in the evaluation of the final result

**Sample Description:** WS-TB-149-091313 Water
Mayflower, AR
Pipeline Incident

**LL Sample # WW 7198337**
**LL Group # 1418941**
**Account # 14739**

**Project Name: Mayflower, AR Pipeline Incident**

Collected: 09/13/2013

Submitted: 09/14/2013 08:50
Reported: 09/23/2013 09:57

ExxonMobil c/o Arcadis
630 Plaza Drive, Suite 600
Highlands Ranch CO 80129

P47TB SDG#: PEL47-17TB*

| CAT No. | Analysis Name | CAS Number | As Received Result | As Received Method Detection Limit* | As Received Limit of Quantitation | Dilution Factor |
|---|---|---|---|---|---|---|
| **GC/MS Volatiles** | **SW-846 8260B 25mL purge** | | ug/l | ug/l | ug/l | |
| 02898 | n-Propylbenzene | 103-65-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Styrene | 100-42-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1,2-Tetrachloroethane | 630-20-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2,2-Tetrachloroethane | 79-34-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrachloroethene | 127-18-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Tetrahydrofuran | 109-99-9 | N.D. | 2.0 | 5.0 | 1 |
| 02898 | Toluene | 108-88-3 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichlorobenzene | 87-61-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,4-Trichlorobenzene | 120-82-1 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,1-Trichloroethane | 71-55-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,1,2-Trichloroethane | 79-00-5 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichloroethene | 79-01-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Trichlorofluoromethane | 75-69-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,2,3-Trichloropropane | 96-18-4 | N.D. | 0.3 | 1.0 | 1 |
| 02898 | 1,2,4-Trimethylbenzene | 95-63-6 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | 1,3,5-Trimethylbenzene | 108-67-8 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Vinyl Chloride | 75-01-4 | N.D. | 0.1 | 0.5 | 1 |
| 02898 | Xylene (Total) | 1330-20-7 | N.D. | 0.1 | 0.5 | 1 |

## General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

## Laboratory Sample Analysis Record

| CAT No. | Analysis Name | Method | Trial# | Batch# | Analysis Date and Time | Analyst | Dilution Factor |
|---|---|---|---|---|---|---|---|
| 02898 | Silvertip & Mayflower VOCs8260 | SW-846 8260B 25mL purge | 1 | I132591AA | 09/16/2013 10:57 | Jason M Long | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 5030B | 1 | I132591AA | 09/16/2013 10:57 | Jason M Long | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary

Client Name: ExxonMobil c/o Arcadis Group Number: 1418941
Reported: 09/23/13 at 09:57 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

## Laboratory Compliance Quality Control

| Analysis Name | Blank Result | Blank MDL** | Blank LOQ | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: I132591AA | Sample number(s): 7198318-7198326,7198328-7198337 | | | | | | | | |
| Acetone | N.D. | 3.0 | 5.0 | ug/l | 105 | | 60-139 | | |
| Allyl Chloride | N.D. | 0.1 | 0.5 | ug/l | 103 | | 61-130 | | |
| Benzene | N.D. | 0.1 | 0.5 | ug/l | 104 | | 80-120 | | |
| Bromobenzene | N.D. | 0.1 | 0.5 | ug/l | 95 | | 80-120 | | |
| Bromochloromethane | N.D. | 0.1 | 0.5 | ug/l | 99 | | 80-125 | | |
| Bromodichloromethane | N.D. | 0.1 | 0.5 | ug/l | 102 | | 80-120 | | |
| Bromoform | N.D. | 0.1 | 0.5 | ug/l | 101 | | 73-128 | | |
| Bromomethane | N.D. | 0.1 | 0.5 | ug/l | 91 | | 62-126 | | |
| 2-Butanone | N.D. | 1.0 | 5.0 | ug/l | 104 | | 70-130 | | |
| n-Butylbenzene | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| sec-Butylbenzene | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| tert-Butylbenzene | N.D. | 0.1 | 0.5 | ug/l | 96 | | 80-120 | | |
| Carbon Tetrachloride | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-129 | | |
| Chlorobenzene | N.D. | 0.1 | 0.5 | ug/l | 99 | | 80-120 | | |
| Chloroethane | N.D. | 0.1 | 0.5 | ug/l | 93 | | 68-120 | | |
| Chloroform | N.D. | 0.1 | 0.5 | ug/l | 104 | | 80-120 | | |
| Chloromethane | N.D. | 0.2 | 0.5 | ug/l | 91 | | 55-120 | | |
| 2-Chlorotoluene | N.D. | 0.1 | 0.5 | ug/l | 98 | | 80-120 | | |
| 4-Chlorotoluene | N.D. | 0.1 | 0.5 | ug/l | 97 | | 80-120 | | |
| 1,2-Dibromo-3-chloropropane | N.D. | 0.2 | 0.5 | ug/l | 96 | | 64-141 | | |
| Dibromochloromethane | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-126 | | |
| 1,2-Dibromoethane | N.D. | 0.1 | 0.5 | ug/l | 102 | | 80-120 | | |
| Dibromomethane | N.D. | 0.1 | 0.5 | ug/l | 101 | | 80-120 | | |
| 1,2-Dichlorobenzene | N.D. | 0.1 | 0.5 | ug/l | 98 | | 80-120 | | |
| 1,3-Dichlorobenzene | N.D. | 0.1 | 0.5 | ug/l | 98 | | 80-120 | | |
| 1,4-Dichlorobenzene | N.D. | 0.1 | 0.5 | ug/l | 98 | | 80-120 | | |
| Dichlorodifluoromethane | N.D. | 0.1 | 0.5 | ug/l | 73 | | 39-120 | | |
| 1,1-Dichloroethane | N.D. | 0.1 | 0.5 | ug/l | 105 | | 80-120 | | |
| 1,2-Dichloroethane | N.D. | 0.1 | 0.5 | ug/l | 105 | | 80-127 | | |
| 1,1-Dichloroethene | N.D. | 0.1 | 0.5 | ug/l | 101 | | 80-123 | | |
| cis-1,2-Dichloroethene | N.D. | 0.1 | 0.5 | ug/l | 101 | | 80-120 | | |
| trans-1,2-Dichloroethene | N.D. | 0.1 | 0.5 | ug/l | 105 | | 80-120 | | |
| Dichlorofluoromethane | N.D. | 0.2 | 0.5 | ug/l | 115 | | 75-145 | | |
| 1,2-Dichloropropane | N.D. | 0.1 | 0.5 | ug/l | 109 | | 80-120 | | |
| 1,3-Dichloropropane | N.D. | 0.1 | 0.5 | ug/l | 102 | | 80-120 | | |
| 2,2-Dichloropropane | N.D. | 0.1 | 0.5 | ug/l | 100 | | 75-122 | | |
| 1,1-Dichloropropene | N.D. | 0.1 | 0.5 | ug/l | 105 | | 80-121 | | |
| cis-1,3-Dichloropropene | N.D. | 0.1 | 0.5 | ug/l | 107 | | 80-123 | | |
| trans-1,3-Dichloropropene | N.D. | 0.1 | 0.5 | ug/l | 104 | | 80-120 | | |
| Ethyl ether | N.D. | 0.1 | 0.5 | ug/l | 103 | | 59-130 | | |
| Ethylbenzene | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| Freon 113 | N.D. | 0.2 | 0.5 | ug/l | 98 | | 78-132 | | |
| Hexachlorobutadiene | N.D. | 0.1 | 0.5 | ug/l | 91 | | 73-120 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

# Quality Control Summary

Client Name: ExxonMobil c/o Arcadis Group Number: 1418941
Reported: 09/23/13 at 09:57 AM

| Analysis Name | Blank Result | Blank MDL** | Blank LOQ | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene | N.D. | 0.1 | 0.5 | ug/l | 99 | | 80-120 | | |
| p-Isopropyltoluene | N.D. | 0.1 | 0.5 | ug/l | 97 | | 80-120 | | |
| Methyl Tertiary Butyl Ether | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| 4-Methyl-2-Pentanone | N.D. | 1.0 | 5.0 | ug/l | 105 | | 69-135 | | |
| Methylene Chloride | N.D. | 0.2 | 0.5 | ug/l | 105 | | 80-120 | | |
| n-Propylbenzene | N.D. | 0.1 | 0.5 | ug/l | 102 | | 80-120 | | |
| Styrene | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| 1,1,1,2-Tetrachloroethane | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| 1,1,2,2-Tetrachloroethane | N.D. | 0.1 | 0.5 | ug/l | 105 | | 80-125 | | |
| Tetrachloroethene | N.D. | 0.1 | 0.5 | ug/l | 94 | | 80-120 | | |
| Tetrahydrofuran | N.D. | 2.0 | 5.0 | ug/l | 97 | | 65-131 | | |
| Toluene | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| 1,2,3-Trichlorobenzene | N.D. | 0.1 | 0.5 | ug/l | 91 | | 63-120 | | |
| 1,2,4-Trichlorobenzene | N.D. | 0.1 | 0.5 | ug/l | 92 | | 70-120 | | |
| 1,1,1-Trichloroethane | N.D. | 0.1 | 0.5 | ug/l | 101 | | 80-120 | | |
| 1,1,2-Trichloroethane | N.D. | 0.1 | 0.5 | ug/l | 104 | | 80-120 | | |
| Trichloroethene | N.D. | 0.1 | 0.5 | ug/l | 104 | | 80-120 | | |
| Trichlorofluoromethane | N.D. | 0.1 | 0.5 | ug/l | 95 | | 77-132 | | |
| 1,2,3-Trichloropropane | N.D. | 0.3 | 1.0 | ug/l | 103 | | 80-120 | | |
| 1,2,4-Trimethylbenzene | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| 1,3,5-Trimethylbenzene | N.D. | 0.1 | 0.5 | ug/l | 100 | | 80-120 | | |
| Vinyl Chloride | N.D. | 0.1 | 0.5 | ug/l | 92 | | 65-127 | | |
| Xylene (Total) | N.D. | 0.1 | 0.5 | ug/l | 98 | | 80-120 | | |
| Batch number: 13258WAA026 | Sample number(s): 7198318-7198326,7198328-7198336 | | | | | | | | |
| Acenaphthene | N.D. | 0.010 | 0.050 | ug/l | 93 | | 77-118 | | |
| Acenaphthylene | N.D. | 0.010 | 0.050 | ug/l | 96 | | 80-123 | | |
| Anthracene | N.D. | 0.010 | 0.050 | ug/l | 98 | | 78-123 | | |
| Benzo(a)anthracene | N.D. | 0.010 | 0.050 | ug/l | 95 | | 73-127 | | |
| Benzo(a)pyrene | N.D. | 0.010 | 0.050 | ug/l | 92 | | 72-120 | | |
| Benzo(b)fluoranthene | N.D. | 0.010 | 0.050 | ug/l | 105 | | 79-136 | | |
| Benzo(g,h,i)perylene | N.D. | 0.010 | 0.050 | ug/l | 88 | | 64-130 | | |
| Benzo(k)fluoranthene | N.D. | 0.010 | 0.050 | ug/l | 89 | | 73-131 | | |
| Chrysene | N.D. | 0.010 | 0.050 | ug/l | 90 | | 76-125 | | |
| Dibenz(a,h)anthracene | N.D. | 0.010 | 0.050 | ug/l | 87 | | 58-131 | | |
| Fluoranthene | N.D. | 0.010 | 0.050 | ug/l | 75* | | 79-124 | | |
| Fluorene | N.D. | 0.010 | 0.050 | ug/l | 96 | | 74-115 | | |
| Indeno(1,2,3-cd)pyrene | N.D. | 0.010 | 0.050 | ug/l | 90 | | 62-130 | | |
| 1-Methylnaphthalene | N.D. | 0.010 | 0.050 | ug/l | 112 | | 80-126 | | |
| 2-Methylnaphthalene | N.D. | 0.010 | 0.050 | ug/l | 108 | | 81-124 | | |
| Naphthalene | N.D. | 0.030 | 0.050 | ug/l | 102 | | 75-120 | | |
| Phenanthrene | N.D. | 0.030 | 0.050 | ug/l | 95 | | 75-120 | | |
| Pyrene | N.D. | 0.010 | 0.050 | ug/l | 86 | | 71-130 | | |
| Batch number: 132581848003 | Sample number(s): 7198318-7198336 | | | | | | | | |
| Arsenic | N.D. | 0.0068 | 0.0200 | mg/l | 101 | | 90-113 | | |
| Barium | N.D. | 0.00033 | 0.0050 | mg/l | 99 | | 90-110 | | |
| Cadmium | N.D. | 0.00076 | 0.0050 | mg/l | 104 | | 90-112 | | |
| Calcium | N.D. | 0.0334 | 0.200 | mg/l | 105 | | 90-110 | | |
| Chromium | N.D. | 0.0016 | 0.0150 | mg/l | 100 | | 90-110 | | |
| Lead | N.D. | 0.0047 | 0.0150 | mg/l | 104 | | 88-110 | | |
| Magnesium | N.D. | 0.0167 | 0.100 | mg/l | 105 | | 90-110 | | |
| Nickel | N.D. | 0.0015 | 0.0100 | mg/l | 104 | | 90-111 | | |
| Selenium | N.D. | 0.0084 | 0.0200 | mg/l | 101 | | 80-120 | | |
| Silver | N.D. | 0.0021 | 0.0050 | mg/l | 93 | | 80-120 | | |
| Vanadium | N.D. | 0.0020 | 0.0050 | mg/l | 100 | | 90-110 | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

# Quality Control Summary

Client Name: ExxonMobil c/o Arcadis Group Number: 1418941
Reported: 09/23/13 at 09:57 AM

| Analysis Name | Blank Result | | Blank MDL** | Blank LOQ | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|---|---|---|---|---|---|---|---|---|---|
| Batch number: 132585713002 | Sample number(s): 7198318-7198336 | | | | | | | | | |
| Mercury | N.D. | | 0.00006 0 | 0.00020 | mg/l | 94 | | 80-120 | | |
| Batch number: 13262807903A | Sample number(s): 7198318-7198335 | | | | | | | | | |
| HEM (oil & grease) | 2.1 | J | 1.4 | 5.0 | mg/l | 93 | 97 | 78-114 | 4 | 16 |

## Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Batch number: I132591AA | Sample number(s): 7198318-7198326,7198328-7198337 UNSPK: 7198324 | | | | | | | | |
| Acetone | 115 | 101 | 57-163 | 13 | 30 | | | | |
| Allyl Chloride | 103 | 105 | 56-160 | 2 | 30 | | | | |
| Benzene | 103 | 104 | 87-126 | 1 | 30 | | | | |
| Bromobenzene | 89 | 90 | 80-123 | 0 | 30 | | | | |
| Bromochloromethane | 95 | 96 | 82-125 | 1 | 30 | | | | |
| Bromodichloromethane | 99 | 100 | 82-133 | 1 | 30 | | | | |
| Bromoform | 92 | 93 | 60-138 | 1 | 30 | | | | |
| Bromomethane | 91 | 92 | 66-130 | 1 | 30 | | | | |
| 2-Butanone | 105 | 99 | 56-160 | 6 | 30 | | | | |
| n-Butylbenzene | 99 | 100 | 83-131 | 2 | 30 | | | | |
| sec-Butylbenzene | 99 | 101 | 84-128 | 2 | 30 | | | | |
| tert-Butylbenzene | 95 | 95 | 84-135 | 1 | 30 | | | | |
| Carbon Tetrachloride | 103 | 105 | 81-148 | 2 | 30 | | | | |
| Chlorobenzene | 96 | 97 | 78-133 | 0 | 30 | | | | |
| Chloroethane | 95 | 97 | 70-139 | 2 | 30 | | | | |
| Chloroform | 103 | 104 | 86-136 | 1 | 30 | | | | |
| Chloromethane | 91 | 91 | 49-135 | 0 | 30 | | | | |
| 2-Chlorotoluene | 94 | 95 | 75-134 | 1 | 30 | | | | |
| 4-Chlorotoluene | 93 | 94 | 76-134 | 1 | 30 | | | | |
| 1,2-Dibromo-3-chloropropane | 103 | 94 | 43-143 | 9 | 30 | | | | |
| Dibromochloromethane | 93 | 93 | 79-125 | 0 | 30 | | | | |
| 1,2-Dibromoethane | 96 | 97 | 84-127 | 1 | 30 | | | | |
| Dibromomethane | 95 | 97 | 83-126 | 2 | 30 | | | | |
| 1,2-Dichlorobenzene | 93 | 93 | 83-117 | 0 | 30 | | | | |
| 1,3-Dichlorobenzene | 94 | 94 | 79-132 | 0 | 30 | | | | |
| 1,4-Dichlorobenzene | 93 | 94 | 79-120 | 1 | 30 | | | | |
| Dichlorodifluoromethane | 76 | 78 | 28-136 | 3 | 30 | | | | |
| 1,1-Dichloroethane | 105 | 106 | 88-136 | 1 | 30 | | | | |
| 1,2-Dichloroethane | 101 | 102 | 82-135 | 1 | 30 | | | | |
| 1,1-Dichloroethene | 105 | 107 | 83-150 | 2 | 30 | | | | |
| cis-1,2-Dichloroethene | 100 | 101 | 82-129 | 2 | 30 | | | | |
| trans-1,2-Dichloroethene | 105 | 108 | 88-127 | 3 | 30 | | | | |
| Dichlorofluoromethane | 116 | 117 | 81-161 | 1 | 30 | | | | |
| 1,2-Dichloropropane | 107 | 108 | 91-126 | 2 | 30 | | | | |
| 1,3-Dichloropropane | 96 | 97 | 80-127 | 1 | 30 | | | | |
| 2,2-Dichloropropane | 100 | 103 | 80-134 | 3 | 30 | | | | |
| 1,1-Dichloropropene | 108 | 110 | 86-139 | 2 | 30 | | | | |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

# Quality Control Summary

Client Name: ExxonMobil c/o Arcadis Group Number: 1418941
Reported: 09/23/13 at 09:57 AM

## Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 102 | 103 | 74-132 | 1 | 30 | | | | |
| trans-1,3-Dichloropropene | 97 | 99 | 71-128 | 1 | 30 | | | | |
| Ethyl ether | 97 | 98 | 57-139 | 1 | 30 | | | | |
| Ethylbenzene | 99 | 100 | 80-140 | 1 | 30 | | | | |
| Freon 113 | 103 | 105 | 77-147 | 2 | 30 | | | | |
| Hexachlorobutadiene | 90 | 91 | 65-128 | 1 | 30 | | | | |
| Isopropylbenzene | 98 | 100 | 81-133 | 2 | 30 | | | | |
| p-Isopropyltoluene | 94 | 96 | 84-124 | 2 | 30 | | | | |
| Methyl Tertiary Butyl Ether | 93 | 96 | 82-132 | 2 | 30 | | | | |
| 4-Methyl-2-Pentanone | 102 | 97 | 69-149 | 5 | 30 | | | | |
| Methylene Chloride | 102 | 104 | 77-135 | 1 | 30 | | | | |
| n-Propylbenzene | 100 | 101 | 79-131 | 0 | 30 | | | | |
| Styrene | 96 | 97 | 63-151 | 1 | 30 | | | | |
| 1,1,1,2-Tetrachloroethane | 95 | 97 | 87-126 | 2 | 30 | | | | |
| 1,1,2,2-Tetrachloroethane | 97 | 97 | 75-131 | 1 | 30 | | | | |
| Tetrachloroethene | 94 | 95 | 75-129 | 1 | 30 | | | | |
| Tetrahydrofuran | 99 | 93 | 56-154 | 6 | 30 | | | | |
| Toluene | 98 | 100 | 83-127 | 1 | 30 | | | | |
| 1,2,3-Trichlorobenzene | 86 | 87 | 73-125 | 1 | 30 | | | | |
| 1,2,4-Trichlorobenzene | 88 | 90 | 77-120 | 2 | 30 | | | | |
| 1,1,1-Trichloroethane | 102 | 104 | 85-140 | 2 | 30 | | | | |
| 1,1,2-Trichloroethane | 97 | 98 | 85-129 | 1 | 30 | | | | |
| Trichloroethene | 104 | 105 | 85-131 | 1 | 30 | | | | |
| Trichlorofluoromethane | 101 | 99 | 73-139 | 2 | 30 | | | | |
| 1,2,3-Trichloropropane | 95 | 93 | 76-120 | 3 | 30 | | | | |
| 1,2,4-Trimethylbenzene | 96 | 97 | 87-126 | 1 | 30 | | | | |
| 1,3,5-Trimethylbenzene | 97 | 98 | 89-129 | 1 | 30 | | | | |
| Vinyl Chloride | 95 | 96 | 62-135 | 1 | 30 | | | | |
| Xylene (Total) | 96 | 97 | 81-137 | 1 | 30 | | | | |
| Batch number: 13258WAA026 | Sample number(s): 7198318-7198326,7198328-7198336 UNSPK: 7198324 | | | | | | | | |
| Acenaphthene | 88 | 87 | 47-136 | 1 | 30 | | | | |
| Acenaphthylene | 97 | 95 | 33-146 | 2 | 30 | | | | |
| Anthracene | 53* | 53* | 69-119 | 1 | 30 | | | | |
| Benzo(a)anthracene | 76 | 79 | 37-150 | 4 | 30 | | | | |
| Benzo(a)pyrene | 46* | 45* | 64-123 | 3 | 30 | | | | |
| Benzo(b)fluoranthene | 83 | 113 | 33-152 | 31* | 30 | | | | |
| Benzo(g,h,i)perylene | 65 | 69 | 36-138 | 6 | 30 | | | | |
| Benzo(k)fluoranthene | 71 | 98 | 31-142 | 32* | 30 | | | | |
| Chrysene | 77 | 81 | 34-135 | 5 | 30 | | | | |
| Dibenz(a,h)anthracene | 75 | 80 | 17-134 | 7 | 30 | | | | |
| Fluoranthene | 99 | 100 | 39-147 | 1 | 30 | | | | |
| Fluorene | 98 | 97 | 38-149 | 0 | 30 | | | | |
| Indeno(1,2,3-cd)pyrene | 73 | 76 | 29-143 | 5 | 30 | | | | |
| 1-Methylnaphthalene | 111 | 112 | 49-152 | 1 | 30 | | | | |
| 2-Methylnaphthalene | 106 | 107 | 51-146 | 1 | 30 | | | | |
| Naphthalene | 102 | 103 | 58-131 | 1 | 30 | | | | |
| Phenanthrene | 94 | 96 | 48-140 | 2 | 30 | | | | |
| Pyrene | 77 | 79 | 59-125 | 3 | 30 | | | | |
| Batch number: 132581848003 | Sample number(s): 7198318-7198336 UNSPK: 7198324 BKG: 7198324 | | | | | | | | |
| Arsenic | 100 | 102 | 81-123 | 2 | 20 | 0.0078 J | 0.0070 J | 11 (1) | 20 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

# Quality Control Summary

Client Name: ExxonMobil c/o Arcadis Group Number: 1418941
Reported: 09/23/13 at 09:57 AM

## Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | RPD MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---|---|---|---|---|---|---|---|---|
| Barium | 100 | 100 | 78-118 | 0 | 20 | 0.0521 | 0.0522 | 0 | 20 |
| Cadmium | 105 | 104 | 83-116 | 1 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Calcium | 104 | 111 | 81-118 | 3 | 20 | 6.99 | 7.03 | 1 | 20 |
| Chromium | 102 | 102 | 81-120 | 1 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Lead | 104 | 104 | 75-125 | 0 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Magnesium | 104 | 108 | 75-125 | 2 | 20 | 3.15 | 3.16 | 0 | 20 |
| Nickel | 105 | 105 | 86-115 | 1 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Selenium | 103 | 103 | 75-125 | 0 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Silver | 94 | 94 | 75-125 | 0 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Vanadium | 103 | 103 | 90-111 | 0 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Batch number: 132585713002 | Sample number(s): 7198318-7198336 UNSPK: 7198324 BKG: 7198324 | | | | | | | | |
| Mercury | 92 | 93 | 80-120 | 1 | 20 | N.D. | N.D. | 0 (1) | 20 |
| Batch number: 13262807903A | Sample number(s): 7198318-7198335 UNSPK: 7198324 BKG: 7198324 | | | | | | | | |
| HEM (oil & grease) | 54* | -3* | 78-114 | 200* | 29 | 1.9 J | 1.6 J | 19* (1) | 18 |

## Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 25-ml purge
Batch number: I132591AA

| | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
|---|---|---|---|---|
| 7198318 | 98 | 100 | 98 | 101 |
| 7198319 | 99 | 104 | 97 | 101 |
| 7198320 | 99 | 105 | 97 | 101 |
| 7198321 | 99 | 100 | 97 | 100 |
| 7198322 | 99 | 102 | 98 | 100 |
| 7198323 | 98 | 103 | 98 | 101 |
| 7198324 | 98 | 102 | 98 | 101 |
| 7198325 | 100 | 103 | 98 | 103 |
| 7198326 | 101 | 104 | 98 | 103 |
| 7198328 | 98 | 99 | 98 | 100 |
| 7198329 | 98 | 100 | 99 | 100 |
| 7198330 | 98 | 99 | 98 | 99 |
| 7198331 | 99 | 103 | 98 | 101 |
| 7198332 | 99 | 101 | 98 | 100 |
| 7198333 | 98 | 103 | 98 | 101 |
| 7198334 | 99 | 102 | 98 | 101 |
| 7198335 | 99 | 103 | 98 | 101 |
| 7198336 | 96 | 96 | 100 | 99 |
| 7198337 | 97 | 103 | 98 | 100 |
| Blank | 97 | 98 | 99 | 100 |
| LCS | 99 | 102 | 98 | 102 |
| MS | 100 | 103 | 98 | 103 |
| MSD | 101 | 104 | 98 | 103 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

# Quality Control Summary

Client Name: ExxonMobil c/o Arcadis Group Number: 1418941
Reported: 09/23/13 at 09:57 AM

## Surrogate Quality Control

| | | | | |
|---|---|---|---|---|
| Limits: | 77-114 | 74-113 | 77-110 | 78-110 |

Analysis Name: PAHs in waters by SIM
Batch number: 13258WAA026

| | Fluoranthene-d10 | Benzo(a)pyrene-d12 | 1-Methylnaphthalene-d10 |
|---|---|---|---|
| 7198318 | 99 | 70 | 108 |
| 7198319 | 73 | 73 | 107 |
| 7198320 | 98 | 63 | 111 |
| 7198321 | 99 | 66 | 105 |
| 7198322 | 103 | 65 | 108 |
| 7198323 | 102 | 64 | 112 |
| 7198324 | 104 | 66 | 111 |
| 7198325 | 101 | 71 | 112 |
| 7198326 | 103 | 79 | 113 |
| 7198328 | 101 | 79 | 108 |
| 7198329 | 103 | 72 | 112 |
| 7198330 | 97 | 67 | 110 |
| 7198331 | 100 | 64 | 110 |
| 7198332 | 102 | 63 | 111 |
| 7198333 | 104 | 61* | 112 |
| 7198334 | 71 | 57* | 90 |
| 7198335 | 103 | 53* | 111 |
| 7198336 | 112 | 94 | 103 |
| Blank | 108 | 104 | 101 |
| LCS | 78 | 106 | 115 |
| MS | 101 | 71 | 112 |
| MSD | 103 | 79 | 113 |
| Limits: | 44-137 | 62-141 | 51-136 |

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

# ExxonMobil Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 14739 — For Eurofins Lancaster Laboratories Environmental use only: Group # 1418941 Sample # 7198318-37

Instructions on reverse side correspond with circled numbers.

1 of 2

**1 Client Information**

Facility #/SID: Mayflower Pipeline Incident

Site Address: Mayflower, AR

ExxonMobil PM: Scott Bushroe — Cost Center/AFE:

Consultant/Office: ARCADIS

Consultant PM: Steve Barrick — Consultant Phone #: 919 302 6799

Sampler: Hans Van Aller / Ryan Lewis

SCR#:

**Preservation Codes**

H = HCl, T = Thiosulfate, N = $HNO_3$, B = NaOH, S = $H_2SO_4$, O = Other

**6 Remarks**

Lab to filter and pressure diss. metals upon receipt

| 2 Sample Identification | Collected Date | Collected Time | 3 Grab | 3 Composite | 4 Matrix: Soil | Water | Oil | Total # of Containers | 5 Analyses Requested: VOCs 8260B (H) | PAH 8270 SIM | RCRA Metals Hg,As,Se,Ag,Pb (N) | Diss. Metals (N) | HEM Oil & Grease (H) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS-014(1.5-2.0)091313 | 9-13-13 | 0830 | X | | | X | | 9 | X | X | X | X | X |
| WS-014(5.5-6.0)091313 | 9-13-13 | 0840 | X | | | X | | 9 | X | X | X | X | X |
| WS-012(1.5-2.0)091313 | 9-13-13 | 0900 | X | | | X | | 9 | X | X | X | X | X |
| WS-012(5.0-5.5)091313 | 9-13-13 | 0910 | X | | | X | | 9 | X | X | X | X | X |
| WS-010(1.5-2.0)091313 | 9-13-13 | 0930 | X | | | X | | 9 | X | X | X | X | X |
| WS-010(3.5-4.0)091313 | 9-13-13 | 0940 | X | | | X | | 9 | X | X | X | X | X |
| WS-006(0.5-1.0)091313 | 9-13-13 | 0950 | X | | | X | | 9 | X | X | X | X | X |
| WS-005(surface)091313 | 9-13-13 | 1020 | X | | | X | | 9 | X | X | X | X | X |
| WS-002(surface)091313 | 9-13-13 | 1110 | X | | | X | | 9 | X | X | X | X | X |
| WS-011(1.5-2.0)091313 | 9-13-13 | 1050 | X | | | X | | 9 | X | X | X | X | X |
| WS-011(5.0-5.5)091313 | 9-13-13 | 1100 | X | | | X | | 9 | X | X | X | X | X |
| WS-018(surface)091313 | 9-13-13 | 1130 | X | | | X | | 9 | X | X | X | X | X |

**7 Turnaround Time Requested (TAT)** (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

**8 Data Package** (circle if required)

Type I - Full
Type VI (Raw Data)
NJ Reduced
Other

**EDD** (circle if required)

Locus EIM (default)
Other

| Relinquished by | Date | Time | Received by | Date | Time |
|---|---|---|---|---|---|
| | 9-13-13 | 1430 | | | |
| | | | | | |
| | | | | | |
| Relinquished by Commercial Carrier: UPS X FedEx Other | | | Received by | 9/14/13 | 850 |

Temperature Upon Receipt 0.5-3.3 °C

Custody Seals Intact? Yes No

**9**

# ExxonMobil Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 14739 For Eurofins Lancaster Laboratories Environmental use only Group # 141894 Sample # 7198318-37

Instructions on reverse side correspond with circled numbers.

2 of 2

SCR#:

**1 Client Information**

Facility #/SID: Mayflower Pipeline Incident

Site Address: Mayflower, AR

ExxonMobil PM: Scott Bushroe | Cost Center/AFE:

Consultant/Office: ARCADIS

Consultant PM: Steve Barrick | Consultant Phone #: 919 302 6799

Sampler: Hans Van Aller / Ryan Lewis

**4 Matrix**: Soil ☐ Sediment ☐ Water ☒ Ground ☐ Potable ☐ Surface ☒ NPDES ☐ Oil ☐ Air ☐

**3** Grab / Composite

**2 Sample Identification** | Collected: Date | Time

**5 Analyses Requested** — Preservation Code

**Preservation Codes**: H = HCl; T = Thiosulfate; N = $HNO_3$; B = NaOH; S = $H_2SO_4$; O = Other

| 2 Sample Identification | Collected Date | Collected Time | 3 Grab | 3 Composite | 4 Matrix | Total # of Containers | 5 VOC 8260B (H) | PAH 8270 SIM | RCRA Metals + Hardness Ni, Ca, V, Mg (N) | Diss. Metals | THEM Oil & Grease (H) | 6 Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS-003(Surface)091313 | 9-13-13 | 1140 | X | | Water | 9 | X | X | X | X | X | |
| WS-007(0.5-1.0)091313 | 9-13-13 | 1150 | X | | Water | 9 | X | X | X | X | X | |
| WS-001(0.5-1.0)091313 | 9-13-13 | 1200 | X | | Water | 9 | X | X | X | X | X | |
| WS-EB-060-091313 | 9-13-13 | 1230 | X | | Water | 7 | X | X | X | X | | |
| WS-006(0.5-1.0)091313 MS/MSD | 9-13-13 | 0950 | X | | Water | 18 | X | X | X | X | X | MS / MSD |
| WS-TB-149-091313 | 9-13-13 | — | X | | Water | 2 | X | | | | | |

**7 Turnaround Time Requested (TAT)** (please circle)

Standard | (5 day) | 4 day | 72 hour | 48 hour | 24 hour

**8 Data Package** (circle if required): Type I - Full; Type VI (Raw Data); NJ Reduced; Other

**EDD** (circle if required): Locus EIM (default); Other

| Relinquished by | Date | Time | Received by | Date | Time |
|---|---|---|---|---|---|
| | 9-13-13 | 1430 | | | |
| | | | | | |
| | | | | | |

Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____

Received by: Date 9/14/13 Time 800

Temperature Upon Receipt 0.5-3.3 °C

Custody Seals Intact? (Yes) No

**9**

eurofins | Lancaster Laboratories

C# 1418941

# Environmental Sample Administration Receipt Documentation Log

**Client/Project:** ExxonMobil

**Date of Receipt:** 9/14/13

**Time of Receipt:** 850

**Source Code:** 60-1

**Shipping Container Sealed:** (YES) NO

**Custody Seal Present * :** (YES) NO

* Custody seal was intact unless otherwise noted in the discrepancy section

**Package:** (Chilled) Not Chilled

| Temperature of Shipping Containers | | | | | | | |
|---|---|---|---|---|---|---|---|
| Cooler # | Thermometer ID | Temperature (°C) | Temp Bottle (TB) or Surface Temp (ST) | Wet Ice (WI) or Dry Ice (DI) or Ice Packs (IP) | Ice Present? Y/N | Loose (L) Bagged Ice (B) or NA | Comments |
| 1 | DT121 | 1.0 | TB | Wt | Y | B | |
| 2 | ↓ | 1.6 | ↓ | ↓ | ↓ | ↓ | |
| 3 | | 0.9 | | | | | |
| 4 | | 0.6 | | | | | |
| 5 | | 3.3 | | | | | |
| 6 | | 0.5 | | | | | |

**Number of Trip Blanks received NOT listed on chain of custody:** 0

**Paperwork Discrepancy/Unpacking Problems:**

**Unpacker Signature/Emp#:** [signature] 2308 **Date/Time:** 9/14/13 1036

Issued by Dept. 6042 Management

2174.06

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# Explanation of Symbols and Abbreviations

*The following defines common symbols and abbreviations used in reporting technical data:*

| | | | |
|---|---|---|---|
| **RL** | Reporting Limit | **BMQL** | Below Minimum Quantitation Level |
| **N.D.** | none detected | **MPN** | Most Probable Number |
| **TNTC** | Too Numerous To Count | **CP Units** | cobalt-chloroplatinate units |
| **IU** | International Units | **NTU** | nephelometric turbidity units |
| **umhos/cm** | micromhos/cm | **ng** | nanogram(s) |
| **C** | degrees Celsius | **F** | degrees Fahrenheit |
| **meq** | milliequivalents | **lb.** | pound(s) |
| **g** | gram(s) | **kg** | kilogram(s) |
| **µg** | microgram(s) | **mg** | milligram(s) |
| **mL** | milliliter(s) | **L** | liter(s) |
| **m3** | cubic meter(s) | **µL** | microliter(s) |
| | | **pg/L** | picogram/liter |

**<** less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

**>** greater than

**ppm** parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

**ppb** parts per billion

**Dry weight basis** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

*Data Qualifiers:*

**C –** result confirmed by reanalysis.

**J -** estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

*U.S. EPA CLP Data Qualifiers:*

**Organic Qualifiers**

| | |
|---|---|
| **A** | TIC is a possible aldol-condensation product |
| **B** | Analyte was also detected in the blank |
| **C** | Pesticide result confirmed by GC/MS |
| **D** | Compound quantitated on a diluted sample |
| **E** | Concentration exceeds the calibration range of the instrument |
| **N** | Presumptive evidence of a compound (TICs only) |
| **P** | Concentration difference between primary and confirmation columns >25% |
| **U** | Compound was not detected |
| **X,Y,Z** | Defined in case narrative |

**Inorganic Qualifiers**

| | |
|---|---|
| **B** | Value is <CRDL, but ≥IDL |
| **E** | Estimated due to interference |
| **M** | Duplicate injection precision not met |
| **N** | Spike sample not within control limits |
| **S** | Method of standard additions (MSA) used for calculation |
| **U** | Compound was not detected |
| **W** | Post digestion spike out of control limits |
| ***** | Duplicate analysis not within control limits |
| **+** | Correlation coefficient for MSA <0.995 |

**Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.